

Appl. No. 10/530,449; Docket No. NL02 0983 US
Amtd. dated November 22, 2006
Response to Office Action dated September 5, 2006

REMARKS/ARGUMENTS

Claims 1-12 are pending in the application.

Claims 1-4 and 8-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chiang* (US 6,339,544) and *Yan* (US 2002/0134995).

Claims 5-7 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chiang* (US 6,339,544) and *Yan* (US 2002/0134995) as applied to claim 4 and further in view of *Hawker* (US 6,670,285).

Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Chiang* (US 6,339,544) and *Yan* (US 2002/0134995) as applied to claim 11 and further in view of *Ovshinsky* (US 6,141,241).

Claims 1-4 and 8-11

Applicants respectfully traverse the §103 rejection in that a prima facie case for obviousness has not been made. *Chiang* “relates generally to programmable memory devices (col. 1, lines 5-6).” Within *Chiang*, “An apparatus including a contact on a substrate, a dielectric material overlying the contact, a phase change element overlying the dielectric material on a substrate, and a heater element disposed in the dielectric material and coupled to the contact and the phase change element, wherein a portion of the dielectric material comprises a thermal conductivity less than silicon dioxide (Abstract).”

In reviewing *Chiang*, Applicants’ feature of “the dielectric material comprising a porous material with pores having a size between 0.5 and 50nm,” is not disclosed. The Office Action concedes this point as well. Furthermore, *Chiang* does not disclose limitations of Claim 2 and that the pores are substantially free of waters and that they have hydrophobic surfaces.

Applicants invention achieves in overcoming a “disadvantage of the known electric device that . . . switching power is still relatively high (Specification, page 3, lines 20-21),” and “when using the known electric device as a resistor with an electrically adjustable resistance it is often desired that the transition between the first phase and the second phase is as fast as possible and that it requires as little electric energy as possible (Specification, page 3, lines 6-9).”

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Applicants, in claiming their invention, address the challenge "to actually obtain an electrical device with a reduced switching power;" thus, "it is essential that the pores are larger than 0.5nm (Specification, page 3, lines 33-34)."

In reviewing *Yan*, Applicants assert that *Yan*'s use of zeolite material is not suggested or taught by *Chiang*. *Yan* does not suggest or teach the use of zeolite material in the "Thermal Resistor Device" as in *Chiang*.

Applicants' does not believe a motivation exists to combine the two references.

In the wafer fabrication arts, a particular process involves very specific recipes to produce silicon devices with sufficient performance and produce a yielding quantity of devices on a given substrate. *Chiang* presents a particular process for a "method to enhance performance of a thermal resistance device." Such a method was derived in a particular production line for a particular process and was adjusted to provide a yield of devices of sufficient performance. One skilled in the art would not willy-nilly combine the teachings of *Yan* absent some convincing evidence of that the *Yan* process is compatible with the process.

Additionally, MPEP §2143.01 provides:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir 1990)

Applicants requests that the §103 rejections be withdrawn with respect to Claim

1.

Regarding the rejections of claims 2-5, which depend from claim 1, Applicant submits that these rejections also fail for the reasons discussed above, in that the cited portions of the *Chiang* reference fail to correspond to the limitations in claim 1 and its subsequent combination with *Yan* does not suggest or teach Applicants' Claim 1 features. Generally, where an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending there from is non-obvious. *See, e.g., In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). In this regard, Applicants request that the rejections of Claims 2-4 be removed.

With respect to Claims 8-11, by the arguments presented *supra*, dependent claims 8-11 are allowable.

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Claims 5-7

Applicants respectfully traverse the §103 rejection based on the combination of *Chiang* and *Yan* applied to claim 4 and further in view of *Hawker* (US 6,670,285). In relation to claim 5, the Office action concedes that the porous material comprises an organosilicate and the hydrophobic surfaces have hydrocarbyl groups.

Since the two primary references, alone or combination does not teach or suggest the feature of the porous material comprising organosilicate and the hydrophobic surfaces having hydrocarbyl groups, one skilled in the art would not be motivated to seek out *Hawker* to overcome the deficiency.

Through thoughtful experimentation, Applicants had achieved unexpected results in that,

"By using a composition comprising a mixture of a tetra-alkoxysilane and one or more hydrocarbylalkoxysilanes such as, e.g., aryl- or alkylalkoxysilanes, a stable layer is obtained that does not require a *dehydroxylation aftertreatment*. [emphasis added] This aspect of the invention is based on the recognition that the formation of a silica network from the alkoxysilanes requires less than four alkoxy groups per silicon atom. Any remaining alkoxy groups and the silanol groups formed after hydrolysis render the silica network hydrophilic. In relation to tetra-alkoxysilane, the hydrocarbylalkoxysilane contains fewer alkoxy groups. . . (Specification page 6, lines 13-20) The hydrocarbyl groups have a hydrophobic, *apolar character and preclude water adsorption in the porous silica network* [emphasis added]. Preferably the ratio is above 1:10. It has been found in an experiment that at a ratio above 1:10, the porous silica network is sufficiently stable to be used as a porous layer in an electric device. Even more stable layers are obtained at a ratio above 1:3 (Specification, page 6, lines 24-27). . . After manufacturing, e.g. during operation, the electric device may be exposed to a higher degree of air humidity, however, because an electric device is customarily encapsulated in a layer to protect it against moisture. With a decreasing ratio of tetra-alkoxysilane to hydrocarbylalkoxysilane the sensitivity to air humidity decreases until the layers are completely insensitive to air humidity (Specification, page 6, lines 33-34)."

Thus, the features recited in claims 5-7 render a porous material with superior characteristics of the cited reference, *Hawker*. In reviewing *Hawker*, Applicants did not find mention of their achieving a characteristic of "the stable layer not requiring a dehydroxylation aftertreatment." Further, the review of *Hawker* did not find mention of Applicants achieving the characteristic of "the apolar character and precluding water

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adsorption in the porous silica network." These particular characteristics give

Applicants' porous material unobvious desirable properties.

Based on the discussion presented, Applicants request that the §103 rejections of claims 5-7 be withdrawn.

Claim 12

In that previous arguments have shown that claim 11 is allowable over the combination of *Chiang* and *Yan*, and that the Office Actions concedes that the selection device of claim 11 comprises "a MOSFET having a source regions, drain regions, and a gate region. . . *et al* (Office Action Item 11) is not present, the further combination with *Ovshinsky* does not suggest or teach Applicants' claimed features.

Applicants request that the §103 rejection of claim 12 be withdrawn.

Applicants believe they have addressed all of Examiner's concerns. A Notice of Allowance is earnestly requested.

The Commissioner is hereby requested and authorized pursuant to 37 CFR §1.136(a)(3), to treat any concurrent or future reply in this application requiring a petition for extension of time for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. Please charge any additional fees which may now or in the future be required in this application, including extension of time fees, but excluding the issue fee unless explicitly requested to do so, and credit any overpayment, to Deposit Account No. 50-4019.

Respectfully submitted,

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